

# Establishing physician advocates for human papillomavirus vaccination in British Columbia

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## Abstract

**Objective** To survey general practitioners in oncology (GPOs) in British Columbia (BC) to identify opportunities for them to serve as public supporters of human papillomavirus (HPV) vaccination.

**Design** A mailed or online survey.

**Setting** British Columbia.

**Participants** Forty-two GPOs who worked in the community in BC.

**Main outcome measures** Current practices, knowledge, and resource needs concerning HPV, the vaccine, and the HPV immunization program, and the willingness of respondents to be contacted to participate in stated public HPV vaccine supporter activities.

**Results** The survey found that 42% of surveyed GPOs were willing to act as public supporters of the HPV vaccine. The survey also identified education needs among GPOs concerning HPV, the vaccine, and the HPV immunization program in BC.

**Conclusion** This study found that GPOs in BC are willing to publicly support the HPV immunization program. This study shows that involving physicians in the promotion of public health programs is a viable option that should be further explored and evaluated.

## EDITOR'S KEY POINTS

- This study surveyed general practitioners in oncology to identify opportunities to engage physicians as public human papillomavirus (HPV) vaccine supporters, in an effort to increase HPV vaccine uptake in British Columbia.
- The group of physicians surveyed was highly supportive of the HPV vaccine. Two-thirds of respondents had received some continuing medical education training about the vaccine, and 88% of respondents indicated that they always or sometimes recommended the HPV vaccine to eligible girls.
- This study identified specific ways in which physicians were willing to be involved with HPV public health programs, including organizing or conducting continuing medical education events and making local presentations.

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# Amener des médecins à promouvoir la vaccination contre le virus du papillome humain en Colombie-Britannique

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## Résumé

**Objectif** Déterminer si les omnipraticiens exerçant en oncologie (OPO) en Colombie-Britannique (CB) sont intéressés à promouvoir publiquement la vaccination contre le virus du papillome humain (VPH).

**Type d'étude** Enquête postale ou en ligne.

**Contexte** La Colombie-Britannique.

**Participants** Quarante-deux OPO travaillant en milieu communautaire en CB.

**Principaux paramètres à l'étude** Pratiques actuelles, connaissances et ressources nécessaires à propos du VPH, du vaccin et du programme d'immunisation contre le VPH; intérêt des répondants à être contactés publiquement à des activités de promotion du vaccin contre le VPH.

**Résultats** L'enquête a montré que 42 % des OPO sondés étaient d'accord pour promouvoir publiquement la vaccination contre le VPH en CB.

**Conclusion** Cette étude a montré que les OPO de la CB étaient intéressés à promouvoir publiquement le programme d'immunisation contre le VPH. Elle montre aussi que le fait d'amener des médecins à supporter des programmes de santé publique est une option viable qui mérite d'être davantage explorée et évaluée.

## POINTS DE REPÈRE DU RÉDACTEUR

- Cette étude a interrogé des omnipraticiens exerçant en oncologie sur la possibilité de devenir des promoteurs publics de la vaccination contre le virus du papillome humain (VPH), afin d'augmenter le taux de vaccination contre le VPH en Colombie-Britannique.
- Le groupe des médecins sondés était très en faveur du vaccin contre le VPH. Les deux tiers des répondants avaient reçu une formation sur le vaccin en éducation médicale continue et 88 % d'entre eux ont déclaré qu'ils recommandaient toujours ou parfois ce vaccin aux filles éligibles.
- Cette étude a identifié de façon précise comment les médecins pourraient participer à des programmes de santé publique sur le VPH, incluant l'organisation et la tenue d'activités de formation médicale continue et de présentations locales.

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In 2005, the incidence of cervical cancer in British Columbia (BC) was 6.7 per 100 000 women; mortality was 2.0 per 100 000 women.<sup>1</sup> This is representative of the observed national decrease in incidence and mortality of cervical cancer between 1996 and 2004 of 2.3% and 3.3% per year, respectively. This is largely attributed to the widespread regular use of Papanicolaou screening.<sup>2</sup> It is estimated that much larger decreases in cervical cancer will be observed if optimal uptake of the vaccine against human papillomavirus (HPV) is achieved.<sup>2</sup>

British Columbia has a publicly funded, school-based HPV immunization program for girls in grades 6 and 9. In the program's first year, 2008 to 2009, 64% of eligible girls were immunized. Given that these girls are minors, parental attitudes, specifically those of the mothers, will play a crucial role in increasing HPV vaccine uptake in BC.<sup>3</sup>

Factors influencing mothers' acceptance of HPV immunization include the benefit to society,<sup>4</sup> the desire to protect their children,<sup>5</sup> concern about the disease,<sup>6</sup> and physician recommendations.<sup>3</sup> Barriers to acceptance are the perception of low severity of and susceptibility to HPV infection,<sup>6</sup> concerns over vaccine safety and efficacy,<sup>4</sup> concerns about its influence on sexual behaviour,<sup>3</sup> and desire to wait until a daughter is older.<sup>7</sup>

Given these complex issues, it is essential to add family physicians, one of mothers' most trusted sources of information regarding their children's health,<sup>8</sup> to the promotion effort.

This study's aim was to identify opportunities to engage physicians as public HPV vaccine supporters through a survey, in an effort to increase vaccine uptake in BC. The survey instrument was designed to identify specific activities that physicians would be willing to participate in, as well as to ask them for permission to contact them in the future to actually participate in the stated activities. Additionally, the survey aimed to determine the physicians' current knowledge about the HPV vaccination program, as well as which resources, if any, they were currently using to promote HPV vaccination. The survey also aimed to determine if the physicians themselves thought that they needed more resources or information to effectively promote HPV vaccination.

General practitioner oncologists (GPOs) in BC are general practitioners who provide oncology care in a primary care setting, typically in areas of the province where oncologist care is not readily available. General practitioner oncologists are family physicians who participate in a preceptor program to strengthen their oncology skills and enhance cancer care in their communities. The goal of the program is to have a family physician who can support all aspects of cancer care for local patients and families. The rationale for surveying this specific population is 2-fold: first, these physicians

are particularly well suited to serving as HPV vaccine advocates, because as general practitioners they are parents' likely source for information about the vaccine<sup>8</sup>; and second, as doctors who treat cervical cancer, their intimate knowledge about the morbidity and mortality associated with the disease makes them particularly passionate about the vaccine and the prevention of the disease. Indeed, this group of physicians has already demonstrated support for the HPV vaccine through their participation in education events throughout the province, and through their biannual newsletter.

## METHODS

The survey was conducted from October 20 to November 16, 2009. The University of British Columbia's Behavioural Research Ethics Board approved the study.

### Population

Forty-four of the 77 members of the General Practitioner Oncology Network in BC work within a community practice setting as opposed to within a hospital setting. Only the 44 GPOs who worked within the community were contacted to complete the survey.

### Survey design and administration

The survey questions were designed to identify specific activities in which the GPOs would be willing to participate. The GPOs' knowledge about the HPV vaccination program, as well as resources they were currently using to promote HPV immunization, was also explored.

The survey was reviewed by a physician at the BC Centre for Disease Control, and the feedback was incorporated.

A review of the literature was conducted to determine the most effective means of surveying a physician population. According to Bhandari and colleagues' review of the literature,<sup>9</sup> the average response rate following the first mailing of questionnaires to health professionals other than physicians is usually 62%, compared with a lower 54% among physicians. Surveying physicians, however, continues to be an effective way to elicit their opinions on the implementation of public health interventions.<sup>10</sup>

Strategies shown to increase response rates among physicians include the use of shorter (eg, 2-page) surveys; personalized packaging of the mailings<sup>10</sup>; monetary, prepaid incentives (which quadrupled response rates among physicians); and personalized questionnaires and letters.<sup>11</sup>

Nonresponse bias among physicians has negligible effects on survey validity.<sup>10</sup> Physicians are more homogeneous than the general population regarding knowledge, training, attitudes, and behaviour. Therefore,

variations among physicians might not be associated with willingness to respond or survey content as in the general population.<sup>10</sup> Limited resources are therefore best directed toward a sufficient monetary incentive in the first mailing, rather than to follow-up mailings, to increase response rates.<sup>10</sup> Additionally, during data interpretation nonresponse bias might not be as crucial as it is in surveys of the general population.<sup>10</sup>

Mailed questionnaires are recommended when the respondent needs greater control over the time, pace, and sequence of response, when privacy of response is important, and when the sample is a highly literate population,<sup>11</sup> such as physicians. Web-based surveys offer a good alternative to mailed surveys,<sup>12</sup> albeit with acknowledged shortcomings. With Web-based surveys, respondents are not usually representative of the general population, even within a certain health care specialty.<sup>12</sup> Therefore, if an electronic survey is used, there must be an alternative hard-copy survey available, to eliminate any potential biases.<sup>12</sup>

Following proven survey strategies, the survey was designed as a short, 15-question, 2-page survey. The survey asked about the physician's current practices and knowledge surrounding the HPV vaccine and the physician's current ties with the community, and also asked the physician to identify specific activities that he or she would be willing to participate in to promote the HPV vaccination program. Finally, the survey requested the physician's consent to be contacted by the local health unit.

Each physician was mailed a package that included introductory letters from the BC Centre for Disease Control and the BC Cancer Agency, a hard copy of the survey with a consent statement and instructions, a postage-paid, pre-labeled return envelope, and a \$20 gift certificate for a coffee chain. The physician had the option of completing the hard copy of the survey and returning it by mail or fax, or of completing an online version of the survey hosted by SurveyMonkey.

Two e-mail reminders were sent to all of the GPOs, with a hyperlink to the online survey. Responses from all channels were accepted until November 16, 2009.

## RESULTS

### Survey response and characteristics of respondents

Of the 44 GPOs who were contacted to participate in the survey, 2 mailed packages were returned to sender owing to incorrect mailing addresses. Of the 42 surveys that were delivered, 24 GPOs (57%) returned completed surveys (83% by mail and 17% online). **Table 1** shows the breakdown of respondents' demographic characteristics. There were no demographic data available for survey nonrespondents.

**Table 1. Demographic characteristics of survey participants: N = 24.**

CHARACTERISTIC	N (%)
Age, y	
• 35-44	7 (29.2)
• 45-54	12 (50.0)
• 55-64	5 (20.8)
Sex	
• Male	10 (41.7)
• Female	13 (54.2)
• Prefer not to disclose	1 (4.2)
Years in practice	
• 6-10	6 (25.0)
• 11-15	4 (16.7)
• > 15	14 (58.3)
Population size of community	
• < 5000	2 (8.3)
• 5000-10 000	5 (20.8)
• 10 001-30 000	8 (33.3)
• 30 001-50 000	2 (8.3)
• 50 001-100 000	5 (20.8)
• > 100 000	2 (8.3)
Ethnic or racial background	
• White	22 (91.7)
• Black	1 (4.2)
• Prefer not to disclose	1 (4.2)

### Knowledge of and attitudes toward HPV vaccine

**Table 2** shows the respondents' knowledge of and attitudes toward the HPV vaccine. Sixty-seven percent of respondents had received continuing medical education (CME) training about the HPV vaccine, and 75% of respondents recommended HPV vaccine to eligible girls all the time. Two respondents commented that the question was not applicable, as they did not serve this patient demographic. Other comments noted that it was often the parents, not the girls, who requested advice or information, and that there was a need for more materials targeted to parents. One respondent claimed to never recommend the vaccine, and commented that there was currently no proof that the vaccine actually decreased the risk of cervical cancer.

### Resources, information, and relationships

**Table 3** shows a breakdown of the resources these physicians were using to counsel their patients about the HPV vaccine, their information needs regarding the HPV vaccine, and the current working relationships they had with other health care professionals in their communities. Of note, 42% of respondents claimed they required more information about statistics regarding HPV infection and vaccination. Also, only 2 respondents claimed to have working relationships with school nurses in the community.

**Table 2. Respondents' knowledge and practices regarding the HPV vaccine: *N* = 24.**

QUESTION	N (%)
Have you ever received any CME training about the HPV vaccine?	
• Do not remember	4 (16.7)
• No	4 (16.7)
• Yes	16 (66.7)
How aware are you of the current provincially funded, school-based HPV immunization program for BC girls in grades 6 and 9?	
• Very aware	15 (62.5)
• Somewhat aware	9 (37.5)
• Not aware	0 (0.0)
Do you currently recommend the HPV vaccine program for girls in grades 6 and 9 to eligible girls in your practice?	
• Yes, all the time	18 (75.0)
• Yes, sometimes	3 (12.5)
• No, never	1 (4.2)
• No response	2 (8.3)

BC—British Columbia, CME—continuing medical education, HPV—human papillomavirus.

### Physicians as public supporters of the HPV vaccine

As shown in **Table 4**, 42% of respondents agreed to share their contact information, as well as the activities that they were willing to participate in as public supporters of the HPV vaccine, with their local health authorities. Of the 2 who did not respond, 1 commented that he or she was not actually a community physician, and several of the physicians who declined to share their contact information wrote in reasons, such as that they were uncomfortable with public speaking or that they would be away from their practices for a year. **Table 4** also shows the activities that respondents were willing to participate in as public supporters of the HPV vaccine; organizing CME on HPV was the activity the most respondents were willing to participate in (38%), followed by conducting CME and making local presentations (33% each, respectively). Several comments were also written in suggesting that this participation was contingent on training or support to carry out the tasks.

## DISCUSSION

The survey response rate of 57% was similar to the average response rate of physicians to surveys of 54%.<sup>9</sup> Surprisingly, 83% of respondents chose to return a hard copy of the survey by mail, rather than completing the survey online, which we thought would be more convenient. However, the original mailing contained a copy of the survey, as well as a preaddressed, postage-paid

**Table 3. Resource use and needs of survey participants regarding the HPV vaccine: *N* = 24.**

QUESTION	N (%)
What are the resources you currently use to counsel patients about HPV and HPV vaccine? Select all that apply.	
• ImmunizeBC website	5 (20.8)
• Canadian Paediatric Society manual	1 (4.2)
• Canadian Immunization Guide	9 (37.5)
• Vaccine manufacturer's materials	8 (33.3)
• Information from health units	8 (33.3)
• Society of Obstetricians and Gynaecologists of Canada recommendations	5 (20.8)
• None of the above	4 (16.7)
• Other	5 (20.8)
Do you require more information about HPV vaccine?	
• Safety	5 (20.8)
• Immunogenicity	2 (8.3)
• Duration of coverage	5 (20.8)
• Statistics such as HPV infection, cervical cancer, or genital wart rates	10 (41.7)
• Adverse events	7 (29.2)
• No, I do not require more information	11 (45.8)
Do you currently have a working relationship with any of the following health care professionals in your community?	
• School nurse	2 (8.3)
• Health unit	15 (62.5)
• Medical health officer	5 (20.8)
• Family physician in private practice	22 (91.7)
• Other specialist in private practice	11 (45.8)
• Pharmacist	20 (83.3)
• Other	1 (4.2)

HPV—human papillomavirus.

envelope, which might have made this option more appealing than having to take the extra step to access the online survey. Most respondents were older than 45 years of age and lived in small communities, which might have affected computer proficiency or Internet access. The mailed survey also provided the physician with more control over his or her answers, and many opted to write in comments or qualifying statements, which was not possible in the online format.

This group of physicians was highly supportive of the HPV vaccine. Two-thirds of respondents had received some CME training about the HPV vaccine, which might have been a factor in the high proportion (88%) of respondents who either always or sometimes recommended the HPV vaccine to eligible girls. Owing to the small sample size, however, a statistical association between CME training and recommendation of the HPV vaccine could not be established. Most of those who only sometimes recommended the vaccine,



**Table 4. Activity participation of survey participants:**  
N = 24.

QUESTION	N (%)
Do you agree to share your contact information, as well as specified activities, with your local health authority?	
• Yes, please	10 (41.7)
• No, thank you	12 (50.0)
• No response	2 (8.3)
As a public supporter of HPV would you be willing to ...	
• Be available as an expert relating to HPV issues for media inquiries in your community?	6 (25.0)
• Make presentations at local schools to parents and staff, to parent advisory groups, or at local town hall meetings?	8 (33.3)
• Help conduct CME on HPV in your community or for your colleagues?	8 (33.3)
• Help organize CME on HPV in your community or for your colleagues?	9 (37.5)
• Write a letter to local newspapers supporting the HPV vaccine or the school-based program?	7 (29.2)
• Other?	2 (8.3)

CME—continuing medical education, HPV—human papillomavirus.

or who did not respond, provided an explanation as to why this was the case (such as they did not see this patient demographic, or they did not work in the community). This support makes it clear that the physician buy-in exists, but it has not been effectively capitalized on. Similarly, only 62% of physicians were very aware of the provincial vaccination program in BC. As these physicians are often a first contact point for parents, there needs to be increased communication between public health and private practice sectors. It is impossible for physicians to support or buy into a program if they are not aware of it, and this serves as a lost opportunity to maximize the success of an important public health program.

Although almost all of the respondents stated that they had working relationships with other family physicians and pharmacists in their communities, only 62% stated this was so with their local health units. Communication among different health care providers in communities is essential to ensuring streamlined health promotion activities. Specifically, communication between health units (which typically design and roll out public health programs) and private practices is a necessary first step to achieving physician support and buy-in for public health programs, which will serve to increase their success; physicians will be better able to care for their patients' health when they are aware of all of the programs that are offered. Indeed, a move to a more integrated and holistic health care system, where health authorities and physicians interact, will be mutually beneficial to all health care professionals involved, as well as to the health of all British Columbians.


In terms of resources, 42% of respondents noted they would like more information on statistics about HPV infection rates, cervical cancer rates, or genital wart rates. There was at least some need for more information indicated in every suggested category. As physicians are considered experts on the topic, it is important to meet these information needs immediately. Other resources suggested were an informational video and materials such as brochures and pamphlets with comprehensive information that was targeted to parents. Further research could focus on what resources would be the most effective.

The overarching goal of this study was to identify specific opportunities to involve GPOs in the promotion of the HPV vaccine. Almost half of the respondents agreed to have their contact information, as well as the activities that they were willing to participate in to promote the vaccine, shared with their local health units. This is an important outcome not only functionally for the health units who will now have a contact list for physicians who they can contact as resources for publicly supporting the vaccine, but also structurally for the field of public health, which has typically been thought of as separate or at times even counter to the practices of private physicians. This study has demonstrated that physicians are willing and have a desire to be involved with public health programs, and it has identified specific ways in which they are willing to be involved in promotion of the HPV vaccine. In this case, these particular physicians were identified to be surveyed, as by virtue of their specialty they were considered to already have a vested interest in the HPV vaccination program and were, therefore, important stakeholders in the program. Future public health programs would likely also benefit by identifying potential health care professional stakeholders before the roll-out of a program, in an effort to achieve buy-in and support from the people who will likely have great influence on the program's success. Indeed, it is likely that if GPOs had been more involved in the planning or roll-out of the publicly funded school-based HPV vaccination program, the program might have been met with more support initially. Regardless, now that these public supporters have been identified, it will be imperative to act on their offered support to ensure the maximum uptake of this vaccine to help decrease the morbidity and mortality associated with HPV infection, genital warts, and cervical cancer.

Given the authority that physicians have with the public on health care decisions, achieving physician support of public health programs has the potential to increase the success and effects of these programs. These results are encouraging but further research is necessary to evaluate the effects of physician support on public health program success as well as which means of physician support are the most effective. Additionally,

further research should aim to survey a larger population of physicians that is more generalizable to see if this interest in participation also exists among other groups of physicians. Owing to the small sample size of this study, it was not possible to test for associations between certain demographic factors and HPV vaccine attitudes, practices, and knowledge. Additionally, this survey was conducted on a specific specialty of physicians, and the results might not be generalizable to all physicians.

## Conclusion

This study found that GPOs in BC were willing to publicly support the HPV immunization program. This study suggests that involving physicians as supporters of public health programs is a viable option. 

**Ms Shahram** is a doctoral student at the University of British Columbia Okanagan campus in Kelowna, BC. **Ms Pielak** is a retired nurse epidemiologist who worked for the BC Centre for Disease Control.

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## Contributors

**Ms Shahram** contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission. **Ms Pielak** provided support, guidance, and oversight for the entire project and approved the final version for submission.

## Competing interests

None declared

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